

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 10/575,293
Confirmation No. 1337
Filing Date April 12, 2006
Inventor Bossidan, Becky
Group Art Unit 1795
Examiner Rodee, Christopher D
Patent Docket No. 200300550-3
Title: Black Toner Particles and Printing Methods

BRIEF OF APPELLANT

To: Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

From: James E. Lake (Tel. 509-624-4276; Fax 509-838-3424)
Wells St. John P.S.
601 W. First Avenue, Suite 1300
Spokane, WA 99201-3828

Appellant appeals from the August 04, 2009 Office Action (hereinafter "Office Action") finally rejecting claims 1-14, 16, 18, and 20. A fee transmittal is included in the amount of \$540.00 in payment of the fees required under 37 C.F.R. § 41.20(b)(2).

TABLE OF CONTENTS

I.	REAL PARTY IN INTEREST	3
II.	RELATED APPEALS AND INTERFERENCES	3
III.	STATUS OF CLAIMS	3
IV.	STATUS OF AMENDMENTS	3
V.	SUMMARY OF THE CLAIMED SUBJECT MATTER	4
VI.	GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	5
VII.	ARGUMENT	5
	A. Rejection of claims 1-11, 14, and 20 under 35 U.S.C. § 112, first paragraph, written description	5
	B. Rejection of claim 12 under 35 U.S.C. § 112, first paragraph, written description	12
	C. Rejection of claim 13 under 35 U.S.C. § 112, first paragraph, written description	13
	D. Rejection of claims 1-14 and 20 under 35 U.S.C. § 112, first paragraph, enablement	13
VIII.	CLAIMS APPENDIX	19
IX.	EVIDENCE APPENDIX	25
X.	RELATED PROCEEDINGS APPENDIX	26

I. REAL PARTY IN INTEREST

The real party in interest of the application is Hewlett-Packard Development Company, L.P. as evidenced by the applicant's name in the published, priority application WO/2005/040934.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's undersigned legal representative, and the assignee of the pending application are not aware of any appeals, interferences, or judicial proceedings which may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-14, 20, and 22-27 are pending in the application with claims 15-19 and 21 previously cancelled. Claims 22-27 are allowed and claims 1-14 and 20 stand finally rejected and are being appealed.

IV. STATUS OF AMENDMENTS

Subsequent to final rejection, Appellant filed an amendment on September 30, 2009. In an October 15, 2009 Advisory Action, the Office refused to enter the amendment. Appellant filed another amendment on November 2, 2009. In a November 19, 2009 Advisory Action, the Office agreed the other amendment would be entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

A concise explanation of the subject matter defined in each of the independent and dependent claims involved in the appeal follows with reference to the original specification.

Claim 1 sets forth a black liquid toner including toner particles dispersed in a carrier liquid. (P. 3, II. 15-17; p. 10, II. 20-21.) Individual particles contain a polymer, carbon black, and a plurality of different colored pigments. (P. 2, II. 27-32; p. 3, II. 28-30; p. 9, II. 3-7.) The carbon black and the plurality of different colored pigments are dispersed in the polymer. (*Id.*) An image formed using the printing toner exhibits an optical density fading of less than 22.6% when exposed to a light having a spectrum of wavelengths from about 270 to about 800 nanometers for a period of about 216 hours. (P. 5, Table; p. 6, II. 1-25.)

Claim 12 depends from claim 11 and sets forth that the carbon black and different colored pigments provide the toner particle with a Chroma value having magnitude less than about 1.5, after printing on white paper, (p. 3, II. 10-12; p. 7, II. 30-32; p. 10, II. 6-8) and wherein the optical density fading is from 10.3% to less than 22.6% (p. 5, Table; p. 6, II. 1-25).

Claim 13 depends from claim 1 and sets forth that the carbon black and different colored pigments provide the toner particle with a Chroma value having magnitude less than about 1, after printing on white paper, (p. 3, II. 10-12; p. 7, II. 30-32; p. 10, II. 10-12) and wherein the image exhibits a change in the Chroma value of less than 3.45 when exposed to the light for the period (p. 6, II. 12-25).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL.

Whether claims 1-14 and 20 comply with the written description requirement under 35 U.S.C. § 112, first paragraph.

Whether claims 1-14 and 20 comply with the enablement requirement under 35 U.S.C. § 112, first paragraph.

VII. ARGUMENT

A. Rejection of claims 1-11, 14, and 20 under 35 U.S.C. § 112, first paragraph, written description.

Pages 2-4 of the Office Action explain the Office's reasoning for the allegation that the claims fail to comply with the written description requirement. All of the clearly identifiable reasons for the rejection are addressed below.

The test for sufficiency of support in an application is whether the disclosure relied upon reasonably conveys to the person of ordinary skill that the inventor had possession of the claimed subject matter at the time of filing.

Ralston Purina Co. v. Far-Mar-Co, Inc., 1570 F.2d 1570, 1575 (Fed. Cir. 1985). "Precisely how close the original description must come to comply with the description requirement of 35 U.S.C. Sec. 112 must be determined on a case-by-case basis." Id. "[T]he primary consideration is factual and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure." In re Wertheim, 541 F.2d 257, 262 (CCPA 1976).

However, the Patent Act and case law precedents “require only sufficient description to show one of skill in the [relevant] art that the inventor possessed the claimed invention.” Union Oil Co. v. Atlantic Richfield Co., 208 F.3d 989, 997 (Fed. Cir. 2000). The claimed invention need not be described word-for-word in the application to satisfy the description requirement. Ralston Purina, 1570 F.2d at 1577-8. Indeed, ranges found in the claims need not correspond exactly to those disclosed in the application. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1566 (Fed. Cir. 1991) (citing Ralston Purina, 1570 F.2d at 1575). The “issue is whether one skilled in the art could derive the claimed ranges” from the disclosure. Id.

It would let form triumph over substance if the description requirement were allowed “to eviscerate claims that are narrowed during prosecution, simply because the patent applicant broadly disclosed [ranges] in the original patent application but then narrowed his claims during prosecution.” Union Oil, 208 F.3d at 1000 (citing In re Wertheim, 541 F.2d at 263). Similarly, “that a claim may be broader than the specific embodiment disclosed in a specification is in itself of no moment.” In re Rasmussen, 650 F.2d 1212, 1215 (CCPA 1981) quoted in Ralston Purina, 1570 F.2d at 1575.

Appellant asserts that the Office has failed to properly determine the teachings reasonably conveyed by Appellant’s application. In some respects, the Office has improperly eviscerated claims narrowed during prosecution merely because the claims are more narrow than the subject matter broadly disclosed in the application. In other respects, the Office has improperly

limited its determined scope of the written description to specific examples disclosed in the application.

Among other features, claim 1 sets forth that “an image formed using the printing toner exhibits an optical density fading of less than 22.6%.” Page 3 of the Office Action alleges that 10.3% fading, the result of one example, constitutes the only numeric value for fading improvement supported by the specification. The Office apparently takes the position, which Appellant traverses, that those of ordinary skill viewing the whole specification would find the inventor only had possession of 10.3% fading and no other numeric amount of fading. That is, despite the ample description, discussed below, of objectives, components, preparation methods, testing methods, etc., it would be unreasonable for those of ordinary skill to find the inventors possessed any fading other than 10.3%.

Page 1, lines 3-5 of the specification states the invention relates to “black toners used in printing and, optionally, to ... their resistance to fading with time.” Page 2, lines 5-6 of the specification states that “[i]n an embodiment of the invention, the black toner has improved light fastness.” “The scope of the invention is limited only by the [original] claims.” (Specification, p. 8, II. 21-22.) Thus, the specification sets out the broad scope of the subject matter disclosed, that is, addressing the resistance of black toner particles to fading with time, specifically, by improving light fastness.

Of course, an improvement in properties is only an improvement because it is made with respect to reference data. No improvement is made

in the abstract. The specification expressly uses “a prior art reference black liquid toner referred to as K3.1.” (Specification, p. 5, II. 6-7.) Comparisons follow on pages 5-6 of the specification between the “inventive toner” and the “reference black liquid toner,” which exhibits fading of 22.6%. While the specification encompasses any improvement in light fastness over the prior art, the specification also provides an embodiment with a benchmark of one prior art value of 22.6% for comparison.

An embodiment of the invention includes providing “black toner particles comprising carbon black and at least two color pigments dispersed in a polymer.” (Specification, p. 2, II. 4-5.) The color pigments function “to balance the off-black components of the carbon black.” (Specification, p. 2, II. 8-11.) “The use of more than one such pigment allows for the possibility of choosing color fast pigments, each of which is not suitable, by itself, for offsetting the off-black condition of the carbon black.” (Id.) Surprisingly, the use of two colored pigments in polymer-based toner particles produces results “far superior to those achievable with inkjet [ink], so that a black toner having ... good color fastness is possible.” (Specification, p. 2, II. 12-17.) In an embodiment, “a light-fast blue pigment and a light-fast violet pigment” are used. (Specification, p. 2, II. 19-20.)

Page 3, line 28 to page 4, line 4 of the specification describes the specific case of black “liquid” toner and discloses that, when the polymer-based toner particles discussed above are used in the black liquid toner, it has “improved light fastness.” Appellant notes that the page 5 Table compares the “inventive toner” with K3.1 prior art toner. The optical density

fading obtained for the “inventive toner” is 10.3%, that is, less than 22.6%, the optical density fading of K3.1.

Page 6, lines 1-19 of the specification describes improvement in light fastness, generally, and improvement in optical density fading, specifically, over K3.1 toner. “These values indicate that the inventive toner [has] substantially better light fastness than the prior art reference toner K3.1.” (Specification, p. 6, II. 15-16.) “The improved light fastness … of the inventive liquid toner is a result of the better light fastness of the pigments used to offset the non-zero hue” of the carbon black. (Specification, p. 6, II. 17-19.)

Page 6, lines 19-29 extend the teachings of the comparison to other black liquid toners. “In general, by using a carbon black and the plurality of color pigments to offset non-zero hue in the carbon black it is possible … to provide a black liquid toner characterized by … improved fade resistance.” (Specification, p. 6, II. 20-23.) “The extra degree of freedom provided by using more than one color offsetting pigment allows for freedom to choose more light fast pigments.” (Specification, p. 6, II. 23-25.) While the inventive liquid toner “is produced using a particular combination of carbon black and two pigments, other combinations of a light fast carbon black and at least two fade resistant ‘balancing’ pigments may be used in the practice of the invention.” (Specification, p. 6, II. 26-29.) Appellant asserts it is inconceivable that those of ordinary skill would view the extension of such teachings to other black liquid toners as being limited to 10.3% fading, as

necessitated by the Office's insistence that the specification only supports 10.3% fading.

A variety of options are disclosed for selection of colored pigments to provide improved fade resistance. Specific pigments are listed. Page 6, line 26 to page 7, line 29 of the specification describes in detail the selection of "fade resistant 'balancing' pigments" (p. 6, l. 28) with the recognition "that not all of these pigments are equally colorfast" (p. 7, l. 24) and that 2, 3, 4, or more pigments may be selected in producing a lightfast black toner. "The choice of which pigments to use will be based on the color of the carbon black, the available colors of the pigments, the relative light fastness of the pigments, the effect of the polymer on the actual colors achieved and the degree of neutrality to be achieved." (Specification, p. 7, ll. 24-27.) Since relative light fastness of the pigments is a listed factor, those of ordinary skill would perceive a goal exists to achieve some particular fading level, such as less than 22.6%.

However, no question exists among those of ordinary skill that the present specification discloses an improvement in black toner with respect to the prior art. Such improvement is expressly referenced against the "reference toner." That is, the improvement is made at least over the properties of K3.1 toner listed in the page 5 Table. Since K3.1 toner is the "reference toner," the understood standard for sufficiently improved optical density fading is appropriately compared to the optical density fading of 22.6% for K3.1 toner. If the optical density fading is equal to or greater than

22.6%, then, by the express description throughout the present specification, no improvement could be considered to exist in optical density fading.

Appellant asserts that those of ordinary skill appreciate a description exists of numerous black toner particle compositions exhibiting optical density fading less than that of K3.1 toner (see further discussion below regarding enablement). The specification provides one actual example, exhibiting optical density fading of 10.3% within the claimed range. However, the present specification expressly expands the improvement to fading other than 10.3%.

Since the specification broadly discloses any improvement in optical density fading, including less than 22.6%, it follows that Appellant may properly narrow the range to encompass a subset. Also, since the specification instructs that the degree of color fastness varies among pigments, and describes numerous options for making black toner particles with improved fade resistance compared to 22.6%, Appellant asserts that the specification adequately supports claim 1.

Appellant asserts that those of ordinary skill, viewing the whole teaching of the specification, as is required, would find it shows the inventor had possession of fading less than 22.6%. The specification possesses a “sufficient description” of the claimed range. The Office’s contrary finding improperly requires the claimed range to be described word-for-word in the specification and to correspond exactly to the broader ranges disclosed. Those of skill could easily derive the claimed range from the specification. It would seem the Office rejects claim 1 simply because the patent applicant

broadly disclosed the claimed range in the specification, but then narrowed the claims during prosecution. Such a rejection is improper under the facts of the present application.

Without question, the Office's requirement to limit the claimed range to the numeric value in the examples or some other value would result in excluding subject matter from the claims that is properly described in the specification. Appellant asserts that those of ordinary skill, viewing the whole teaching of the specification, as is required, would find it shows the inventor had possession of fading other than demonstrated in the examples. The Office's contrary finding improperly refuses to permit a claim broader than a specific embodiment disclosed in the specification. Those of ordinary skill could reasonably find that the inventor had possession of an image formed using the printing toner exhibiting optical density fading of less than 22.6%, as set forth in claim 1.

As a result, Appellant respectfully requests withdrawal of the rejection and allowance of all pending claims.

B. Rejection of claim 12 under 35 U.S.C. § 112, first paragraph, written description.

Amended claim 12 depends ultimately from amended claim 1 and sets forth optical density fading of from 10.3% to less than 22.6%. As supported by MPEP 2163.05 (III), where the original specification describes a broad numerical range for a limitation, the specification may be found also to support a lesser included range. Since the specification supports optical density fading of less than 22.6%, Appellant asserts that it also supports

optical density fading of from 10.3% to less than 22.6%, encompassing the specific example of 10.3% as one endpoint.

C. Rejection of claim 13 under 35 U.S.C. § 112, first paragraph, written description.

Claim 13 sets forth a change in the Chroma value of less than 3.45. At least page 6, lines 12-25 of the present specification discuss the change in color neutrality of the “inventive toner” in the page 5 Table compared to K3.1 toner. Change in color neutrality is another aspect of light fastness. Since 3.45 is the change in Chroma value for K3.1 toner, it follows from the discussion above regarding optical density fading that the present specification contains a written description of a change in Chroma value of less than 3.45, as set forth in claim 13.

D. Rejection of claims 1-14 and 20 under 35 U.S.C. § 112, first paragraph, enablement.

The Federal Circuit has held “that a patent specification complies with the statute even if a ‘reasonable’ amount of routine experimentation is required in order to practice a claimed invention, but that such experimentation must not be ‘undue.’” Enzo Biochem, Inc. v. Calgene, Inc., 52 USPQ 2d 1129, 1135-36 (Fed. Cir. 1999). Several factors may be considered to determine whether a disclosure would require undue experimentation, although all factors need not be reviewed. Id. The factors include: “(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of

those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims." Id.

Appellant previously asserted that particular portions of the present specification along with the knowledge of those of ordinary skill is more than adequate such that a reasonable amount of routine experimentation will suffice to practice all of the claimed inventions. Appellant reminds the Office that a patent need not teach, and preferably omits information that is well known in the art. MPEP § 2164.01; In re Buchner, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. MPEP § 2164.01; In re Angstadt, 537 F.2d 498, 504, 90 USPQ 214, 219 (CCPA 1976). Given the abundance of information available to those of ordinary skill, Appellant asserts that review by those of ordinary skill of the collective, publicly available information will minimize any experimentation such that only a reasonable amount of experimentation is necessary, if any at all.

The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. MPEP § 2164.01; In re Certain Limited-Charge Cell Culture Microcarriers, 221 USPQ 1165, 1174 (Int'l Trade Comm'n 1983), aff 'd. sub nom., Massachusetts Institute of Technology v. A.B. Fortia, 774 F.2d 1104, 227 USPQ 428 (Fed. Cir. 1985). Appellant notes that the art typically engages in experimentation to produce almost any toner composition. Routine experimentation is widely known to involve varying the quantity and type of components in statistically

designed experiments, producing various toner compositions, measuring toner properties, and focusing in on desired parameters using statistical evaluations.

As stated on page 9 of the Office Action, the level of skill is high in the toner art. The Office Action also alleges that predictability is low. However, predictability is not of concern for the toner particles of claim 1. Page 7, lines 15-23 of the present specification lists “substantially lightfast pigment groups” sufficient to obtain optical density fading of less than 22.6%, as claimed. The list includes commercially available pigments of Benzimidazolone, Isoindolinone, Isoindoline, Phthalocyanine, Perylene, Perinone, Diketopyrrolo pyrrole (DPP), Thioindigo, Dioxazine, Iron Oxide, Lead Chromate, Chromium Oxide, and Ultramarine. Claim 20 sets forth the list of pigment groups. Page 6, line 33 to page 7, line 4 additionally lists numerous specific purple or blue pigments that are suitable.

Appellant notes that claim 1 is not limited to a particular level of color neutrality. Hence, many black toner particles with varying levels of optical density fading less than 22.6% may be produced within the scope of claim 1 with very little, if any, experimentation. Certainly, the resulting toners can exhibit an optical density fading of less than 22.6%, other than 10.3%, sufficient to enable the range of claim 1. Notably, claim 12 sets forth a narrower range of 10.3% to less than 22.6%, which is also enabled.

Page 5, lines 1-3 of the specification states, “[t]he above production procedures may be varied in accordance with prior art experience and production methods known in the art, different from those described above,

may be used to produce toner in accordance with the invention.” While the inventive liquid toner “is produced using a particular combination of carbon black and two pigments, other combinations of a light fast carbon black and at least two fade resistant ‘balancing’ pigments may be used in the practice of the invention.” (Specification, p. 6, II. 26-29.) “In general, the mix of colored pigments used will depend on the color of the carbon black used.”

(Specification, p. 6, II. 31-32.) Additional guidance is provided.

“To determine an appropriate combination of a given light fast carbon black and balancing pigments, the non-neutral hue of the carbon black is determined and at least two balancing pigments are chosen to neutralize the hue. A batch of liquid toner is produced from appropriate quantities of the carbon black and balancing pigments using any suitable manufacturing procedure and the color of the resultant toner determined. Amounts of the carbon black and balancing pigments are adjusted and/or other balancing pigments added as required to improve neutrality of the pigment until a satisfactory result is obtained.”

(Specification, p. 7, II. 8-14.)

Further guidance is also provided.

“It should be understood that not all of these pigments are equally colorfast and that the choice of which pigments to use will be based on the color of the carbon black, the available colors of the pigments, the relative lightfastness of the pigments, the effect of the polymer on the actual colors achieved and the degree of neutrality to be achieved.

Using three, four or more pigments allows for a greater degree of

flexibility in producing a lightfast, neutral black toner." (Specification, p. 7, II. 24-29.)

Additional fine tuning, such as to produce the Chroma value ranges of claim 13, may involve some routine experimentation also using the instructions of page 7, lines 8-14 and 24-29. However, to the extent that some minimal experimentation is involved, the amount of such experimentation would be reasonable given the guidance available in the present specification and the known art.

Page 5-6 of the Office Action refers to a massive number of possible combinations of Chemical Abstracts compounds and typical pigments for liquid electrostatic toners described in Diamond and alleges that undue experimentation would be required to produce the claim 1 toner particle. However, the teachings of Chemical Abstracts and Diamond are not dispositive. The Chemical Abstracts search was limited only to compound names. No evidence exists that the numerous search hits for phthalocyanine, dioxazine, and perylene each represent a unique pigment. Regardless, the present specification lists 11 carbon blacks, 12 specific purple or blue pigments, and 13 substantially lightfast pigment groups sufficient to enable claim 1. No requirement exists to enable all of the compounds in Chemical Abstracts or all of the pigment list in Diamond.

Even so, as described above, the specification explains criteria for narrowing pigment choices, a methodology for forming black liquid toner, and techniques for toner property evaluation. With the additional known, routine experimentation normally performed by those of ordinary skill, claim 1 is

enabled by the specification. Appellant requests withdrawal of the enablement rejection in the next Office Action.

Appellant herein establishes adequate reasons supporting patentability of claims 1-14 and 20 and requests allowance of all pending claims.

Respectfully submitted,

Dated: 12/29/2009 _____ By: /James E. Lake/ _____
James E. Lake
Reg. No. 44,854

VIII. CLAIMS APPENDIX.

1. (previously presented) A black liquid toner for use in printing comprising toner particles dispersed in a carrier liquid, individual particles containing:
 - a polymer;
 - carbon black; and
 - a plurality of different colored pigments;wherein the carbon black and the plurality of different colored pigments are dispersed in the polymer, and wherein an image formed using the printing toner exhibits an optical density fading of less than 22.6% when exposed to a light having a spectrum of wavelengths from about 270 to about 800 nanometers for a period of about 216 hours.
2. (previously presented) A black liquid toner according to claim 1 wherein the plurality of colored pigments comprises two colored pigments.
3. (previously presented) A black liquid toner according to claim 1 wherein the plurality of colored pigments comprises three or more colored pigments.
4. (previously presented) A black liquid toner according to claim 1 wherein one of the colored pigments is a blue pigment.
5. (previously presented) A black liquid toner according to claim 4 wherein the blue pigment has a color index pigment blue 15:3.

6. (previously presented) A black liquid toner according to claim 4 wherein the blue pigment has a color index pigment blue 15:4.

7. (previously presented) A black liquid toner according to claim 6 wherein the blue pigment is a Phthalocyanine pigment.

8. (previously presented) A black liquid toner according to claim 1 wherein one of the colored pigments is a violet pigment.

9. (previously presented) A black liquid toner according to claim 8 wherein the violet pigment has a color index pigment violet 23.

10. (previously presented) A black liquid toner according to claim 8 wherein the violet pigment is a Dioxazine pigment.

11. (previously presented) A black liquid toner according to claim 1 wherein the carbon black and different colored pigments provide the toner particle with a Chroma value having magnitude less than about 2, after printing on white paper.

12. (previously presented) A black liquid toner, in accordance with claim 11 wherein the carbon black and different colored pigments provide the toner particle with a Chroma value having magnitude less than about 1.5, after printing on white paper, and wherein the optical density fading is from 10.3% to less than 22.6%.

13. (previously presented) A black liquid toner according to claim 1 wherein the carbon black and different colored pigments provide the toner particle with a Chroma value having magnitude less than about 1, after printing on white paper, and wherein the image exhibits a change in the Chroma value of less than 3.45 when exposed to the light for the period.

14. (previously presented) A black liquid toner according to claim 1 wherein the polymer is a copolymer of ethylene and methacrylic acid.

15. (canceled).

16. (canceled).

17. (canceled).

18. (canceled).

19. (canceled).

20. (previously presented) A black liquid toner according to claim 1 wherein the plurality of pigments are selected from pigment groups consisting of Benzimidazolone, Isoindolinone, Isoindoline, Phthalocyanine, Perylene, Perinone, Diketopyrrolo pyrrole (DPP), Thioindigo, Dioxazine, Iron Oxide, Lead Chromate, Chromium Oxide, and Ultramarine.

21. (canceled).

22. (previously presented) A black liquid toner comprising a combination of:

- a carrier liquid;
- a slurry of plasticized polymer particles solvated with the carrier;
- carbon black having a non-zero hue;
- a light fast, blue pigment having a color index pigment blue 15:3 or 15:4; and
- a violet pigment having a color index pigment violet 23;

wherein the polymer, carbon black, blue pigment, and violet pigment are configured to provide the toner with a Chroma value having a magnitude less than about 1, after printing on white paper.

23. (previously presented) The black liquid toner according to claim 22 wherein the blue pigment and violet pigment are configured so that a region printed on a substrate with the toner exhibits an optical density fading of 10.3% when exposed to a light having a spectrum of wavelengths from about 270 to about 800 nanometers for a period of about 216 hours.

24. (previously presented) A black liquid toner comprising:

- a carrier liquid;
- a copolymer of ethylene and methacrylic acid;
- carbon black; and
- a plurality of different colored balancing pigments, wherein one of the colored pigments is a blue Phthalocyanine pigment and one other of the colored pigments is a violet Dioxazine pigment;

wherein the carbon black and the plurality of different colored pigments are dispersed in the polymer; and

wherein the carbon black and different colored pigments provide the toner particle with a Chroma value having a magnitude less than about 2, after printing on white paper.

25. (previously presented) A black liquid toner comprising:

- a carrier liquid;
- a polymer;
- carbon black; and
- a plurality of different colored pigments, wherein one of the colored pigments is a blue Phthalocyanine pigment and one other of the colored pigments is a violet Dioxazine pigment;

wherein the carbon black and the plurality of different colored pigments are dispersed in the polymer, and wherein an image formed using the toner exhibits an optical density fading of 10.3% when exposed to a light having a spectrum of wavelengths from about 270 to about 800 nanometers for a period of about 216 hours.

26. (previously presented) A black liquid toner according to claim 24 wherein an image printed on white paper using the toner exhibits a Chroma value practically unchanged when exposed to a light having a spectrum of wavelengths from about 270 to about 800 nanometers for a period of about 216 hours.

27. (previously presented) A black liquid toner according to claim 24 wherein the printing on white paper is performed in a liquid toner electrophotographic printer.

IX. EVIDENCE APPENDIX.

Not applicable.

X. RELATED PROCEEDINGS APPENDIX.

Not applicable.